



A new culture of innovation in Scotland

The case for Digital Health and Care Institute

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***“Necessity
is (also) the mother of all innovation.”***

Scottish Funding Council's Vision

- “Innovation Centres will **create sustainable and internationally ambitious open-communities** of university staff, research institutes, businesses and others to deliver **economic growth** and wider benefits for Scotland”.
- £124M invested in Innovation centres over four years

The Scottish Environment

- 19 higher education institutes
- 14 territorial health boards
- 6 specialist health boards
- 32 local authorities
- 32 Health & Care Partnerships
- >250 third sector organisations
- 1,200 high growth companies



Scotland's Innovation Centres



Innovative sensor and imaging solutions. Reducing risks, costs and time to market for industrial applications



Bio-based solutions for the chemical, life science and energy industries – Led by Industry for Industry



Building the Future: Blending industry demand driven challenges with world-leading academic expertise to supercharge growth across the construction sector in Scotland, through a mixture of collaborative R&D, explorative new technologies and disruptive innovation, creating global opportunities for local companies



Delivering a University matchmaking service and providing access to innovation funding for the entire oil and gas supply chain



Industry success through research partnerships: driving applied research to boost the long-term economic benefits of farmed fish, shellfish and aquatic plant life



The Data Lab,
Unlocking Value from Data



Constructively disrupting health and care provision through innovating the right products and services and establishing a new digital health economy for Scotland



Right patient right drug, right time. Applying genomic medicine to the NHS and Pharma/bio clinical development



The Digital Health and Care Institute

- Established in 2013 by NHS24, University of Edinburgh and Glasgow School of Arts.
- Aim: to work **collaboratively** to create **digital innovation** in Scotland in **health** and **care** integration with focus on the delivery of

Academic, **B**usiness and **C**ivic Impact.

Definition of health (and care):

"Health is a state of complete physical, mental and social wellbeing, and not merely the absence of disease and infirmity.

-the World Health Organisation

(the definition has not been amended since 1948)

What is Digital Health?



Digital Health & Care - Lexicon

- Wireless health
- mHealth apps
- Gamification
- Health 2.0
- Big data
- E-patients
- D-carers
- Telehealth
- Telemedicine
- Cloud computing
- Connected Health



DHI INNOVATION MODEL

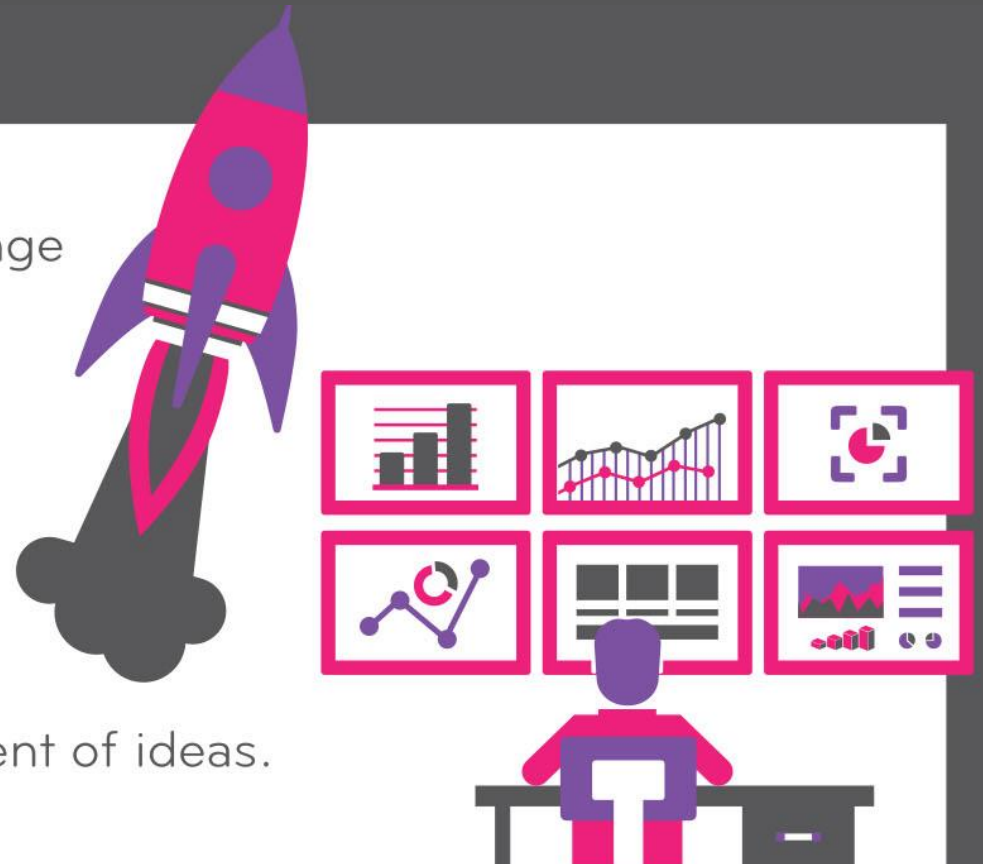
DHI's innovation model is made up of the three settings:

EXPLORATORY, LABORATORY & FACTORY

which will overlap and sequence dynamically to meet the needs of the opportunity in question.

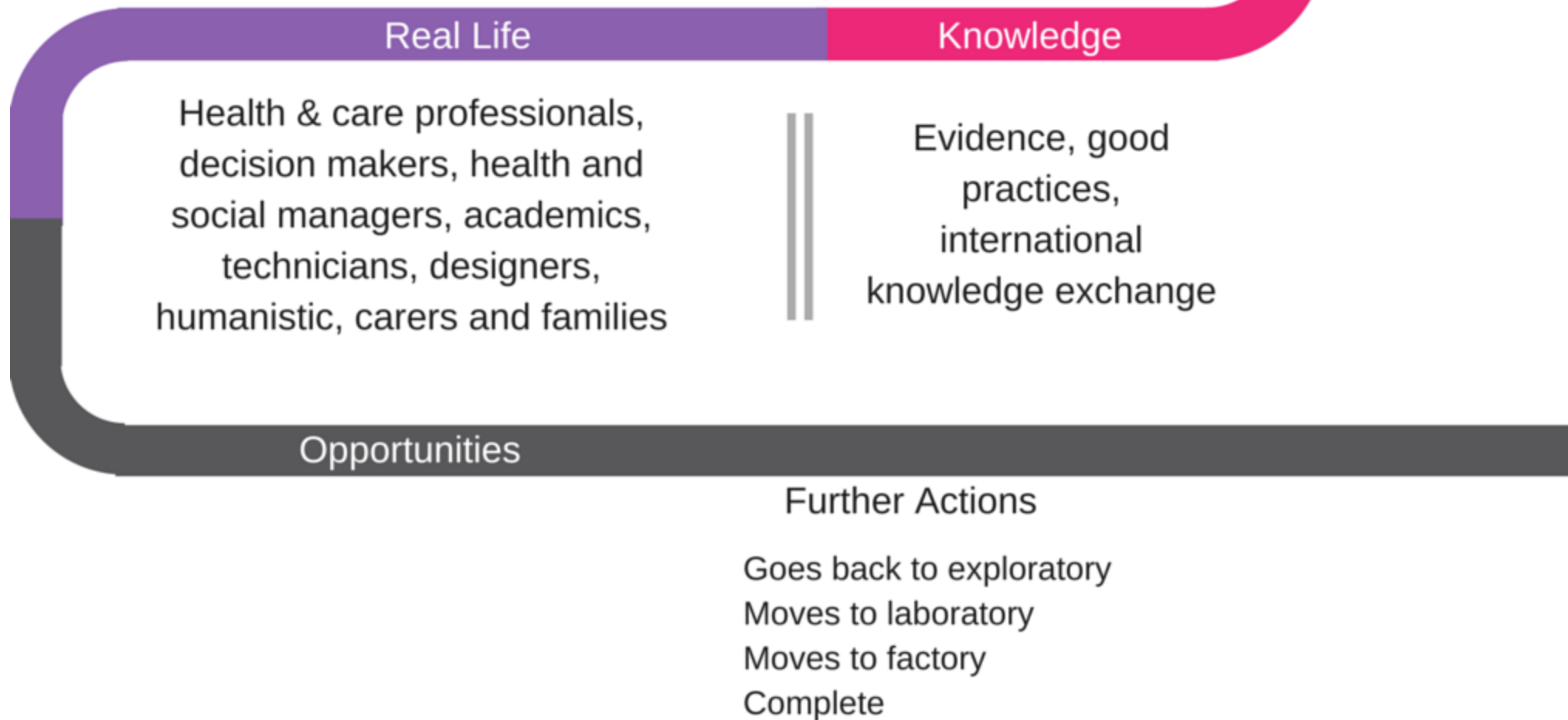


DHI EXPLORATORY engages a wide range of organisations to develop priorities for action informed by the most current, diverse and relevant research, innovation and knowledge sources. This provides a crucial horizon scanning capability, allowing Scotland to design and innovate for the future. The Exploratory runs activities to stimulate the development of ideas.



Addressing emerging needs

(of citizens, health and care services, professionals, etc.)



Searching for Digital opportunities

Bespoke Exploratories

Scottish ambulance service redesign

Mental health apps

Music therapy solutions

Atrial fibrillation

My Little One and mHealth

Treatment adherence

Next generation of digital records

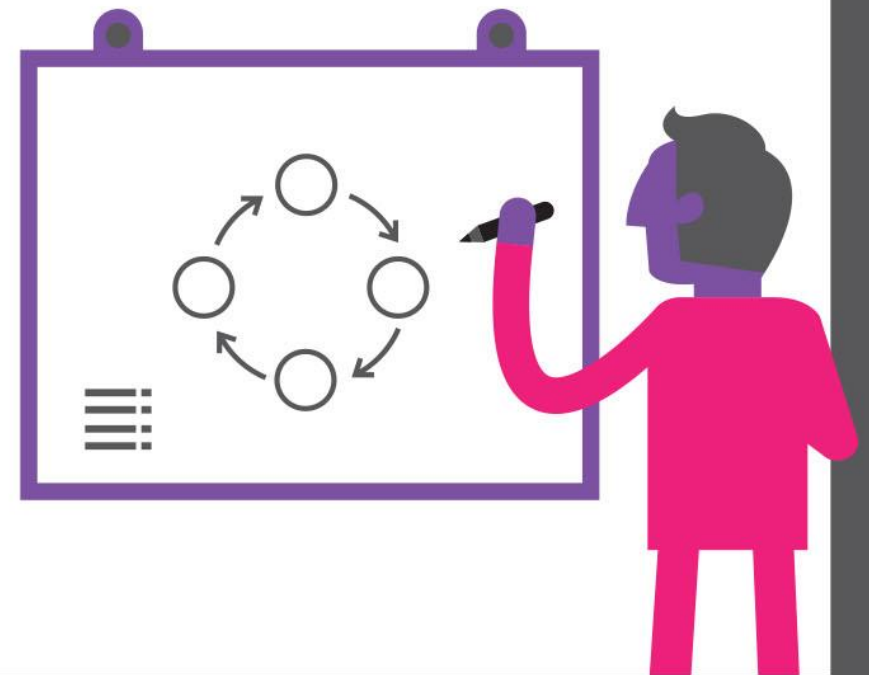
Blood donation service redesign

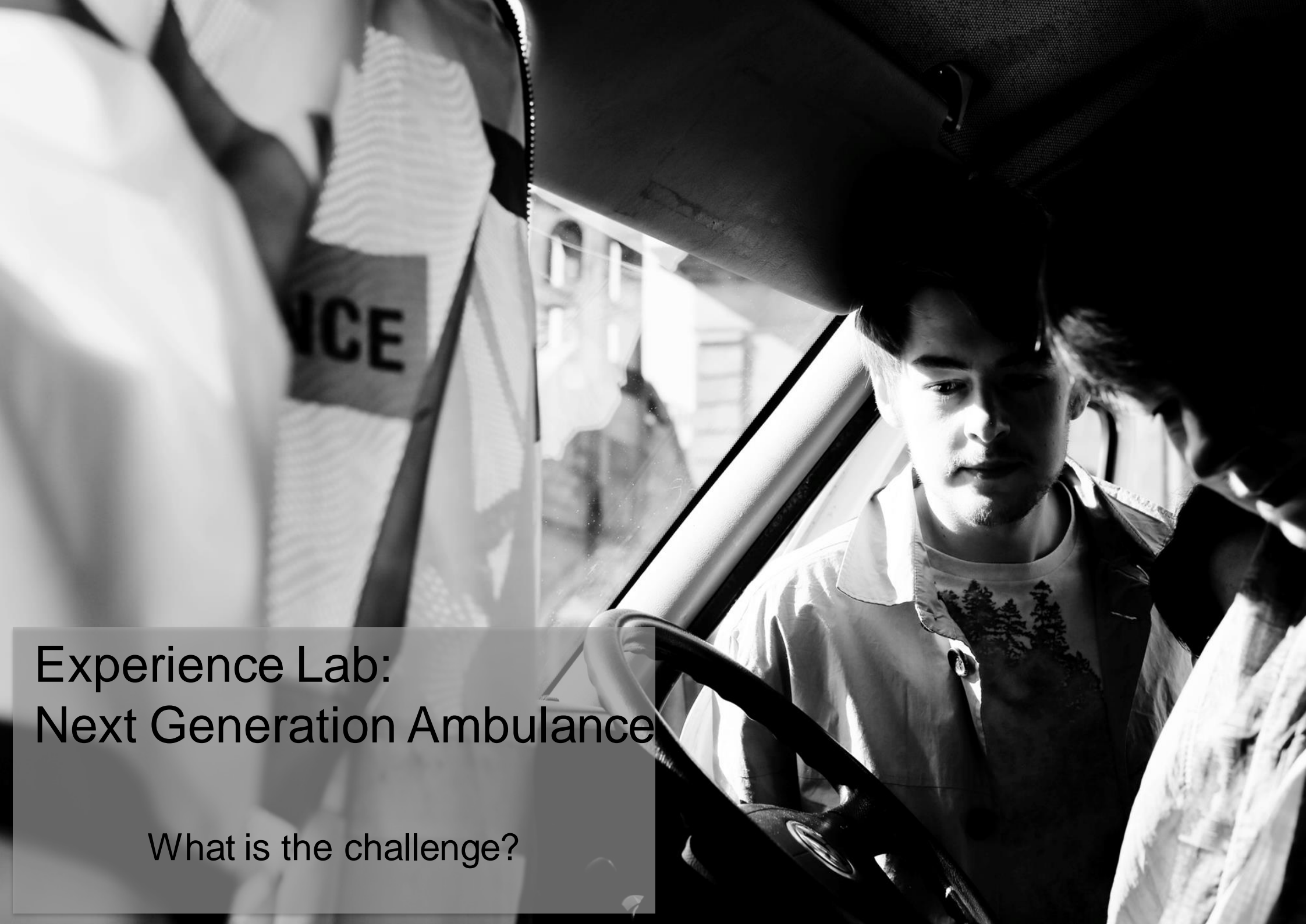
Outpatient care redesign

Long term care revolution

Not all solutions require the same process nor the same methodology

DHI LABORATORY provides a safe environment where users (service users, carers, clinicians, practitioners and third sector), businesses and researchers can collaborate and rapidly prototype in response to health and care challenges. Experience labs provide a creative environment using design to carry out rapid cycles of experience trialling of new ideas.



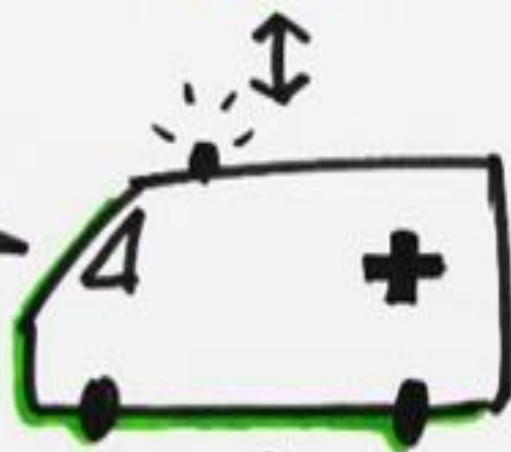


Experience Lab: Next Generation Ambulance

What is the challenge?

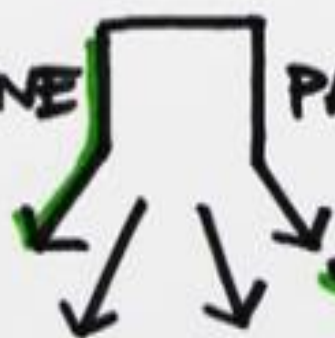


WHO WE
GONNA
CALL??



N.B!
LINKING TO EXISTING
PILOTS!

ALTERNATIVE PATHWAYS



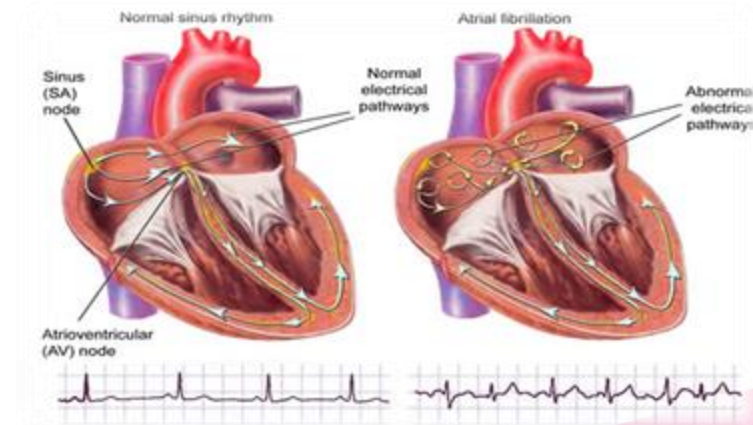
...AND HERE?

DHI FACTORY supports DHI members in progressing a known solution closer to market and deployment. The Factory offers a facilitation and resource platform, including access to expertise and test environments, business mentoring support and facilitation to source funding. The Factory works with industry, health and care partners, third sector and university partners to develop solutions for real life.



Atrial Fibrillation (AF)

- Atrial Fibrillation is the most prevalent sustained heart rhythm disorder
- AF increases individuals' risk of suffering a stroke by five times
- 60% increase in hospital admissions due to AF since mid-90s
- Millions of pounds of avoidable expenditure in the NHS in Scotland



What have we done?



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Evaluated whether it is possible to take accurate ECGs anywhere at low cost

Determined the number of undetected Atrial Fibrillation cases

Conducted an academic & health economic analysis on long term consequences of undetected Atrial Fibrillation and stroke high prevalence



The AliveCor Heart Monitor

Portfolio Breakdown

Over 80 Projects

25+ ideas at
speculative
stage

20+ products
near prototype

30 products at
prototype or
beyond

Membership Network – 1200 digital health innovators
from across Academic, Business and Civic Sectors

Active Project Partners
47 businesses,
63 academic teams or institutes
66 teams or organisations across health & care services

Successes:

- Linking industry capability to the Scottish Government Health and Care priorities;
- Leveraging the high quality academic expertise present at Scottish HEIs;
- Brokering between representatives from academia, SMEs and civic organisations to form new collaborative projects;
- Raising interest from large international corporations for Scotland as a place to do business.

Challenges:

- Interdisciplinary and cross-sectoral collaboration;
- Trying to innovate within a well-established system built-up over decades;
- Trying to exist and expand as an independent entity tied within the governance structures of other institutions;
- National scaling up of successful projects;
- Funding only available to the academic partners;
- Scottish geography.



Questions



DIGITAL
HEALTH & CARE
INSTITUTE

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